STATE OF NEW HAMPSHIRE

Department of Environmental Services
Air Resources Division

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FROM Jeff Underhill, Ph.D.
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TO Craig Wright
Director

SUBJECT Review of 1999 SO_2 Monitoring Data for Eliot, ME

On August 28th, 2013, a copy of the NHDES August 2000 report "*An Assessment of Airborne Particulate Matter Concentrations and Deposition in Eliot, Maine: An Ambient Air Monitoring and Analysis Special Project*" was handed to me in follow-up to another conversation. Upon my review I discovered there was a 30-day period in 1999 where DES monitored hourly sulfur dioxide concentrations in Eliot, Maine. I was aware that DES had done a monitoring investigation in regard to complaints of particle deposition in Eliot, but I was unaware that sulfur dioxide was also monitored in the study. Since there is currently a high level of interest regarding sulfur dioxide concentrations in Eliot, I have performed a review and analysis of this information and provide a summary of this work in the attachment to this memorandum.

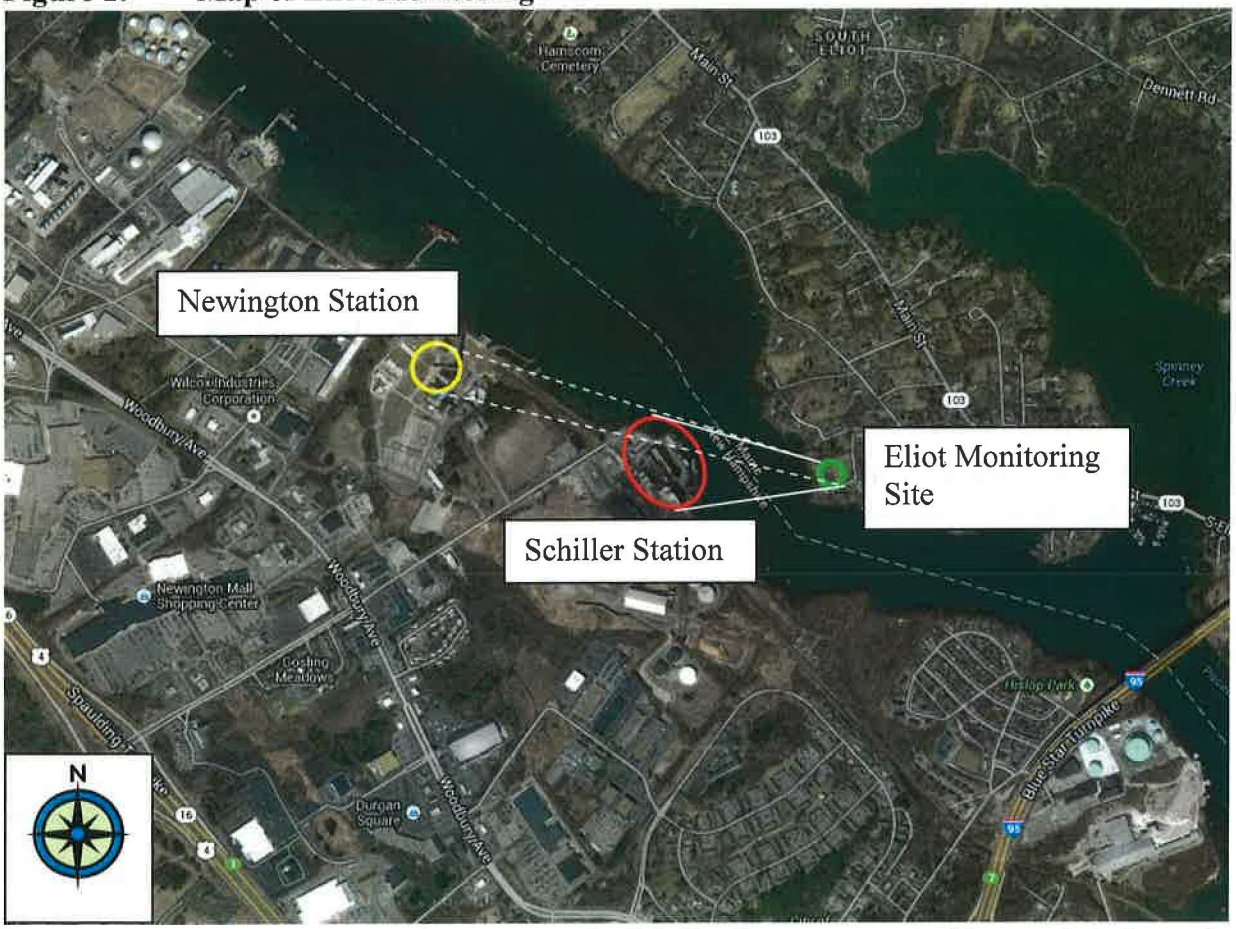
The attached review is an analysis of 1-hour SO_2 concentrations that were measured in Eliot, Maine from August 22, to September 20, 1999. The analysis correlates wind directions and emission rates at Schiller Station with the SO_2 measurements. Although there are caveats to the review, which are documented in the attachment, the analysis did not find conclusive evidence that Schiller Station was causing 1-hour SO_2 concentrations in excess of the 2008 SO_2 NAAQS of 0.075 part per million in Eliot, Maine.

Attachment

Background

In August 2000 NHDES prepared a report entitled "*An Assessment of Airborne Particulate Matter Concentrations and Deposition in Eliot, Maine: An Ambient Air Monitoring and Analysis Special Project*". This report described sulfur dioxide (SO_2) and total suspended particles (TSP) measurements taken in Eliot Maine during the late summer of 1999. These measurements were collected at a temporary monitoring station that was established in an open field along Alden Lane in Eliot, which is located just to the east of the Piscataqua River. The site is also directly across the river from Schiller Station, a coal burning power plant. The power plant is located about 800 yards to the west of the monitoring station location and there was a clear line of sight between the two locations. SO_2, TSP, and particle sample swabs were sampled from August 22, 1999 through September 20, 1999. The Eliot monitoring site is shown in Figure 1.

Figure 1: Map of Eliot Monitoring Site



Eliot monitoring site is denoted by green circle, Schiller Station is marked by a red circle, and Newington station is marked by a yellow circle. Impacts at the Eliot monitor due to Schiller Station would be most likely to occur with wind directions from the west (250 to 300 degrees from north).